

Application No. 09/988,488
Amendment dated June 7, 2006
Reply to Office Action of March 7, 2006

REMARKS

Status Of Application

Claims 1, 2, 4-18, 20-45, 50, and 51 are pending in the application; the status of the claims is as follows:

Claims 28-45 are withdrawn from consideration.

Claims 1, 2, and 4-8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,444,807 to Liu (“Liu ‘807”) in view of U.S. Patent No. 6,235,471 B1 to Knapp et al (“Knapp”).

Claims 1, 2, 4-18, 20, and 22-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,020,207 to Liu (“Liu ‘207”) in view of Knapp.

Claim 21 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu ‘207 in view of Knapp, as described above, and further in view of U.S. Patent No. 5,804,453 to Chen (“Chen”).

Claims 50 and 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu ‘207 in view of Knapp, as applied to claim 17 above, and further in view of either one of U.S. Patent No. 6,078,705 to Neuschafer et al (“Neuschafer”) and U.S. Patent No. 5,082,629 to Burgess, Jr. et al (“Burgess”).

Information Disclosure Statement

Please note that an Information Disclosure Statement, along with a PTO Form 1449, was filed on November 1, 2005; however, we have not received a copy of the PTO Form 1449 initialed by the Examiner. Enclosed is a copy of the PTO Form 1449 from PAIR. Acknowledgment of receipt of these documents is respectfully requested.

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Claim Amendments

Claims 1 and 2 have been cancelled.

Claims 4, 6 and 17 have been amended to more clearly recite the invention. These changes do not introduce any new matter.

Claims 8-13 and 15 have been amended to correspond to the language of amended claim 6. Claims 20, 22-27 and 50 have been amended to correspond to the language of amended claim 17. These changes do not introduce any new matter.

35 U.S.C. § 103(a) Rejections

The rejection of claims 1, 2, and 4-8 under 35 U.S.C. § 103(a), as being unpatentable over Liu '807 in view of Knapp, is respectfully traversed based on the following.

Claims 1 and 2 have been cancelled. Thus the rejection of Claims 1 and 2 are moot.

Claim 4 includes the following limitation:

a third flow pass in which the liquid mixture flows and light from a reaction of the liquid mixture is generated, the third flow pass being connected to the confluence area and being located downstream from the confluence area *and on a different level from the first and the second flow passes*

Neither Liu '807 nor Knapp discloses a structure in which a third flow pass, where a liquid mixture flows and light from a reaction of the liquid mixture is generated, *is on a different level from the first and second flow passes*.

Therefore, the combination of Liu '807 and Knapp fails to teach, suggest, or render obvious Claim 4. Dependent Claim 5 is directly dependent upon Claim 4 and is allowable for at least the reasons discussed with respect to Claim 4.

Claim 6 includes the following limitations:

- a first flow pass in which a specimen flows;
- a second flow pass in which a reagent flows;
- a confluence area in which the specimen and the reagent flowing from the first and the second flow passes join and make a liquid mixture, the confluence area being located downstream from the first and the second flow passes;
- a third flow pass in which the liquid mixture flows and light from a reaction of the liquid mixture is generated, the third flow pass being connected to the confluence area and being located downstream from the confluence area; and
- a discharge port which is located downstream from the third flow pass and is connected to the third flow pass;

Thus, Claim 6 requires that the third flow pass, in which light from a reaction of the liquid mixture is generated, be connected between the confluence area and the discharge port. In an embodiment described in the specification, the entirety of flow pass 25 is a detection region, extending from the confluence area 24 to the discharge port 28. Consequently, the efficiency of the excitation light is maximized when detecting, for example, fluorescent light, and loss of the light when detecting self-emission light is reduced.

The Office Action cites Liu '807 and states that "The flow pass extends from entry point (12) to exit point (13). However, the flow pass of Liu '807 has areas where the light is not detected or the excitation light is not applied, such as the areas between the entry point 12 and the light guide 10, and between the exit point 13 and the light guide 10. Further, Liu '807 does not disclose first and second flow passes in which a specimen and a reagent respectively flow, nor does Liu '807 disclose a confluence area in which the specimen and reagent join and make a liquid mixture.

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Knapp's detection zone 426 (of FIG. 4A) is not located proximate the confluence area, but is separated by a separation channel 404b. Knapp does not teach that the distance between the confluence area and the detection area needs to be small. In fact, the length of the detection zone 426 is much smaller than the length of the separation channel 404b.

Therefore, the combination of Liu '807 and Knapp fails to teach, suggest, or render obvious Claim 6. Claims 7 and 8 are directly dependent upon Claim 6 and is allowable for at least the same reasons.

Accordingly, it is respectfully requested that the rejection of claims 1, 2, and 4-8 under 35 U.S.C. § 103(a) as being unpatentable over Liu '807 in view of Knapp, be reconsidered and withdrawn.

The rejection of claims 1, 2, 4-18, 20, and 22-27 under 35 U.S.C. § 103(a), as being unpatentable over Liu '207 in view of Knapp, is respectfully traversed based on the following.

Claims 1 and 2 have been cancelled. Thus the rejection of Claims 1 and 2 are moot.

Claim 4 includes the following limitation:

a third flow pass in which the liquid mixture flows and light from a reaction of the liquid mixture is generated, the third flow pass being connected to the confluence area and being located downstream from the confluence area *and on a different level from the first and the second flow passes*

Neither Liu '207 nor Knapp discloses a structure in which a third flow pass, where a liquid mixture flows and light from a reaction of the liquid mixture is generated, *is on a different level from the first and second flow passes*.

Therefore, the combination of Liu '207 and Knapp fails to teach, suggest, or render obvious Claim 4. Dependent Claim 5 is directly dependent upon Claim 4 and is allowable for at least the reasons discussed with respect to Claim 4.

Claim 6 includes the following limitations:

- a first flow pass in which a specimen flows;
- a second flow pass in which a reagent flows;
- a confluence area in which the specimen and the reagent flowing from the first and the second flow passes join and make a liquid mixture, the confluence area being located downstream from the first and the second flow passes;
- a third flow pass in which the liquid mixture flows and light from a reaction of the liquid mixture is generated, the third flow pass being connected to the confluence area and being located downstream from the confluence area; and
- a discharge port which is located downstream from the third flow pass and is connected to the third flow pass;

As discussed above, Claim 6 requires that the third flow pass, in which light from a reaction of the liquid mixture is generated, be connected between the confluence area and the discharge port.

The Office Action cites Liu '207 and states that the flow pass (10) constitutes a detection target region. However, like the flow pass of Liu '807, the flow pass (10) of Liu '207, has areas where the light is not detected or the excitation light is not applied. Further, Liu '207 does not disclose first and second flow passes in which a specimen and a reagent respectively flow, nor does Liu '207 disclose a confluence area in which the specimen and reagent join and make a liquid mixture.

As discussed above, Knapp's detection zone 426 (of FIG. 4A) is not located proximate the confluence area, but is separated by a separation channel 404b. Further, as discussed above, Knapp does not teach that the distance between the confluence area and the detection area needs to be small. In fact, the length of the detection zone 426 is much smaller than the length of the separation channel 404b.

Therefore, the combination of Liu '207 and Knapp fails to teach, suggest, or render obvious Claim 6. Claims 7-16 are directly or indirectly dependent upon Claim 6 and are allowable for at least the same reasons.

Claim 17 includes the following limitations:

- a first flow pass in which a specimen flows;
- a second flow pass in which a reagent flows;
- a confluence area in which the specimen and the reagent flowing from the first and the second flow passes join and make a liquid mixture, the confluence area being located downstream from the first and the second flow passes;
- a third flow pass in which the liquid mixture flows and light from a reaction of the liquid mixture is generated, the third flow pass being connected to the confluence area and being located downstream from the confluence area; ...
- a discharge port which is located downstream from the third flow pass and is connected to the third flow pass;

Thus, Claim 17 requires that the third flow pass, in which light from a reaction of the liquid mixture is generated, be connected between the confluence area and the discharge port. As discussed above, Liu '807 does not disclose first and second flow passes in which a specimen and a reagent respectively flow, nor does Liu '807 disclose a confluence area in which the specimen and reagent join and make a liquid mixture. Further, as discussed above, Knapp's detection zone 426 (of FIG. 4A) is not located proximate the confluence area, but is separated by a separation channel 404b. Knapp does not teach that the distance between the confluence area and the detection area needs to be small. In fact, the length of the detection zone 426 is much smaller than the length of the separation channel 404b.

Therefore, the combination of Liu '207 and Knapp fails to teach, suggest, or render obvious Claim 17. Claims 18, 20 and 22-27 are directly or indirectly dependent upon Claim 17 and are allowable for at least the same reasons.

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Accordingly, it is respectfully requested that the rejection of claims 1, 2, 4-18, 20, and 22-27 under 35 U.S.C. § 103(a) as being unpatentable over Liu '207 in view of Knapp, be reconsidered and withdrawn.

The rejection of claim 21 under 35 U.S.C. § 103(a), as being unpatentable over Liu '207 in view of Knapp, as described above, and further in view of Chen, is respectfully traversed based on the following.

Claim 21 is dependent upon Claim 17. As discussed above, the combination of Liu '207 and Knapp fails to teach, suggest, or render obvious Claim 17. Chen fails to rectify the deficiencies of Liu '207 and Knapp in that Chen fails to disclose a third flow pass, in which light from a reaction of the liquid mixture is generated, connected between the confluence area and the discharge port.

Accordingly, it is respectfully requested that the rejection of claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Liu '207 in view of Knapp, as described above, and further in view of Chen, be reconsidered and withdrawn.

The rejection of claims 50 and 51 under 35 U.S.C. § 103(a), as being unpatentable over Liu '207 in view of Knapp, as applied to claim 17 above, and further in view of either one of Neuschafer and Burgess, is respectfully traversed based on the following.

Claims 50 and 51 are dependent upon Claim 17. As discussed above, the combination of Liu '207 and Knapp fails to teach, suggest, or render obvious Claim 17. Neuschafer and Burgess fail to rectify the deficiencies of Liu '207 and Knapp in that Neuschafer and Burgess fail to disclose a third flow pass, in which light from a reaction of the liquid mixture is generated, connected between the confluence area and the discharge port.

Accordingly, it is respectfully requested that the rejection of claims 50 and 51 under 35 U.S.C. § 103(a) as being unpatentable over Liu '207 in view of Knapp, as

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applied to claim 17 above, and further in view of either one of Neuschafer and Burgess, be reconsidered and withdrawn.

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, does not increase the total number of claims, and does not present any multiple dependency claims. Accordingly, no fee based on the number or type of claims is currently due. However, if a fee, other than the issue fee, is due, please charge this fee to Sidley Austin LLP Deposit Account No. 18-1260.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee,

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and not submitted herewith should be charged to Sidley Austin LLP Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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